

## PROJECT PROCESS: Recognizing the Problem

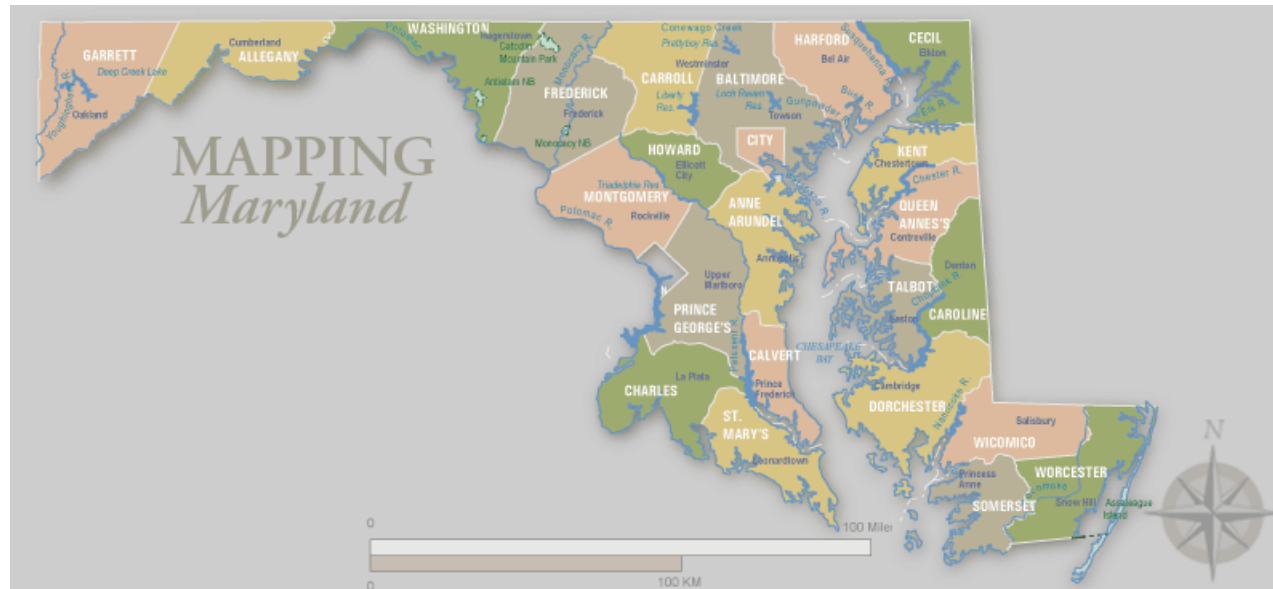


**Bhaskaran Subramanian**

January 16, 2010

## Problem – Erosion

- MD shorelines approximately 7,000 miles.



- Erosion affects all 16 coastal counties along the Chesapeake Bay and Coastal Bays watersheds.

Rate of change	Shoreline Length	
	Miles	%
Accretion	2,006	30
No Change	75	1
<b>Slight erosion</b> 0 to -2 feet/year	3,740	56
<b>Low erosion</b> -2 to -4 feet/year	618	9
<b>Moderate erosion</b> -4 to -8 feet/year	173	3
<b>High erosion</b> Over -8 feet/year	48	1
Total	6,659	100



Low Erosion: 2-4 ft/y

Slight Erosion: 0-2 ft/y







High Erosion: 8+ ft/y

Moderate Erosion: 4-8 ft/y



## Site Visit

- Critical- experience counts!!
- Explore ground situation: neighbor's property, existing spits, etc.
- Assessment of existing structures.
- Photographs.



## Who can help?

- **Kelly Palmer:** St. Mary's County Planning & Zoning (410-475-4200 ext 1528)
- **Alex Roy:** MD Dept. of the Environment (410-537-3739)
- **Bruce Young:** Soil Conservation District (301-475-8402 ext 3)
- **Jerry Walls:** Eastern Shore RC&D (410-822-9300 ext 4)
- **Laurel Crawford:** MD Dept. Natural Resources (410-260-8523)

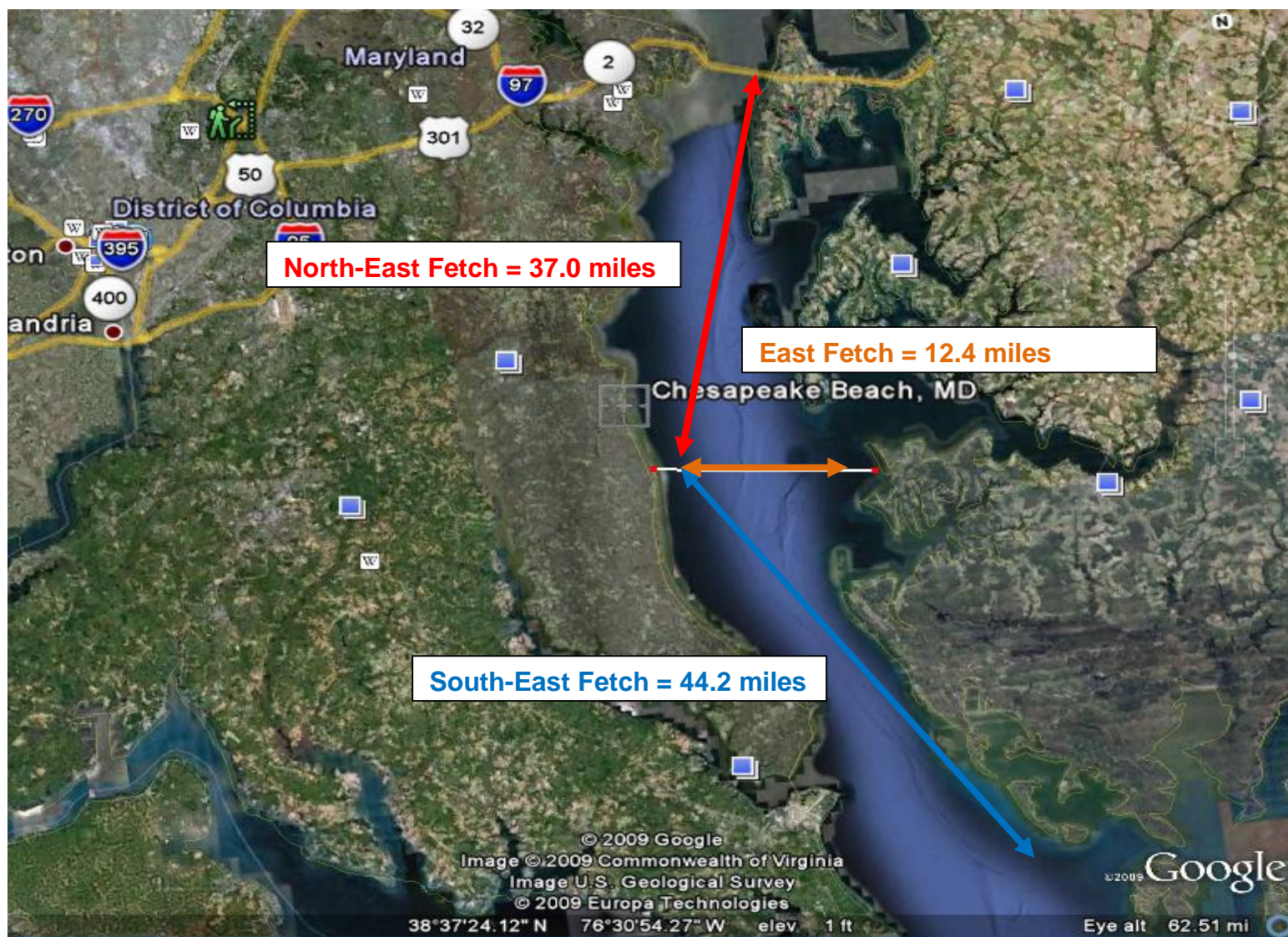


## Research Tools

- Google Earth®
  - Fetch
  - Extent of the project (linear feet)
  - <http://earth.google.com/>
- Maryland Shorelines Online
  - Historical shoreline changes
  - Average erosion rate
  - [http://shorelines.dnr.state.md.us/sc\\_online.asp](http://shorelines.dnr.state.md.us/sc_online.asp)
- MERLIN
  - Maryland's Environmental Resources & Land Information Network
  - Another mapping tool: “electronic atlas”.
  - <http://www.mdmerlin.net/index.html>

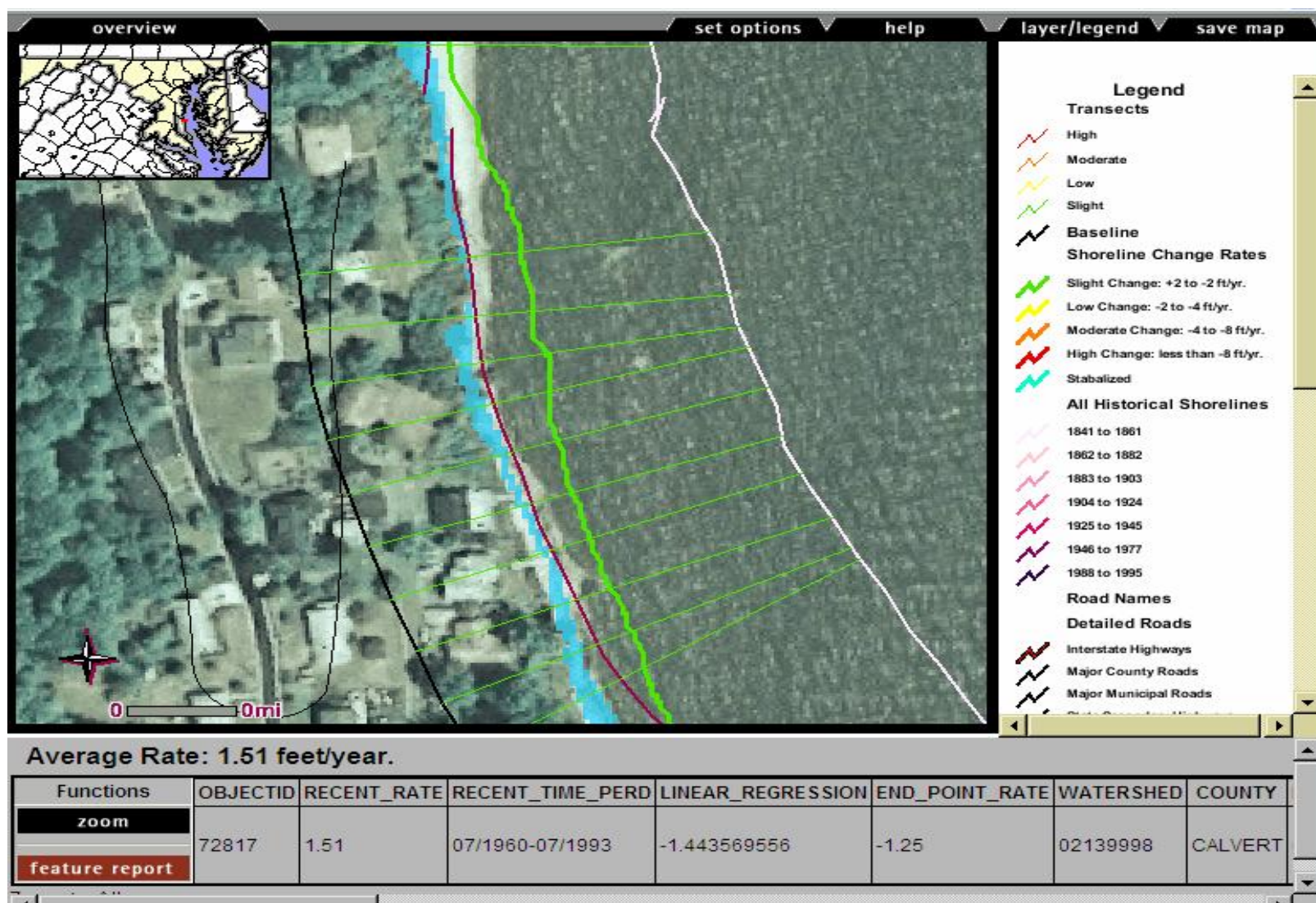


# Fetch





# Historic Erosion Rate



# Detailed Survey

- Topographic
  - Lay of the land (elevations, slopes, etc.)
- Bathymetric
  - Maps the topography and features of the bed of body of water.
  - High tide and low tide line.
- Soil
  - Studies the type of soils and helps decide the suitability of structures.
- Biological
  - Existing vegetation.
  - Invasive.



## Do you need someone to oversee the project?

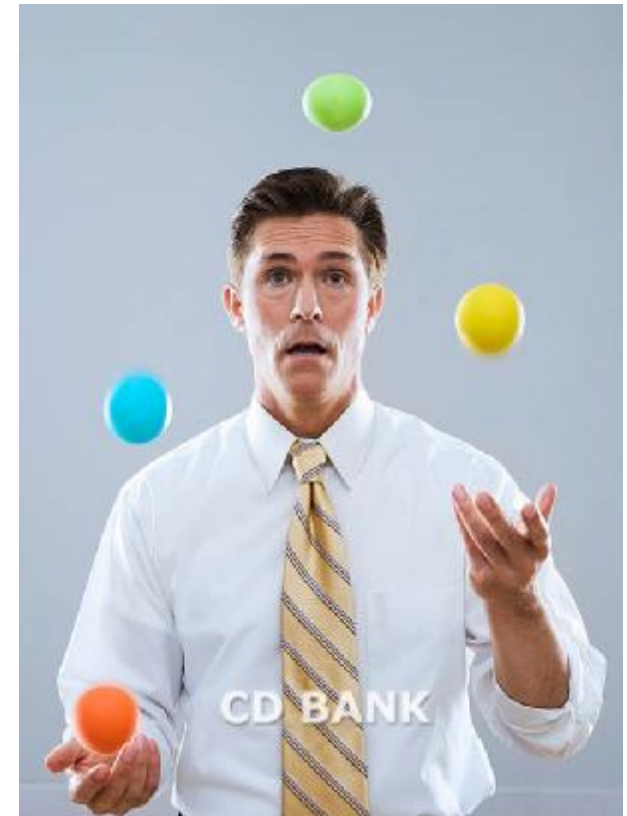
- Ideal world- NO
- But we don't live in an ideal world
- Experienced project managers (like RC&D)
- Background of the inspector
- As-built survey- critical to the integrity of the project.





## Pre-Project Meetings

- Discuss design options:
  - Goal: erosion control, habitat enhancement, etc.
  - Appropriate technique
  - Affordability
- Estimation of costs.
- Funding avenues: DNR, MDE, CBT or other sources.
- Concept Plan.
- Get all the parties involved early on the process.
- Permits- Federal, State, Local (buffer management plan, erosion & sediment control).



Courtesy: <http://www.webstockpro.com/Corbis/42-15529587.Businessman-Juggling-Photo/>

# Do you need an engineer and/ or contractor?



**Bhaskaran Subramanian, Ph.D.**  
**Natural Resources Manager**

**Ph: (410) 260-8786**

**E-Mail: [bsubramanian@dnr.state.md.us](mailto:bsubramanian@dnr.state.md.us)**

